

# IMPLEMENTATION OF APPROACHES TO INNOVATION MANAGEMENT OF PUBLIC ADMINISTRATIONS INTO INDUSTRIAL COMPANIES. THEORETICAL CONSIDERATIONS AND MODEL FOR PRACTICAL REALIZATION

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## Abstract

At the beginning the article focuses on general thematic considerations and explains why the implementation of approaches towards innovation management of public administrations into the private sector can be regarded as a reasonable aim. Furthermore, the underlying basic hypotheses are being established. Afterwards, the individual steps of a generally applicable implementation model will be described in detail and additional considerations on implementations and instructions on the course of action will be provided. At the end of each process that has been realized this way, a structured evaluation of the implemented methods and actions will be conducted.

On the basis of a specific instruction on the course of action the article describes a generally usable model with the necessary work stages, instruments and required accompanying measures.

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**Keywords:** Innovation management, implementation of approaches towards innovation management, public administration

## Introduction:

As industrial companies are constantly challenged to work and improve on their products and services regarding innovations in order to remain a viable force among the competition a structured innovation management is becoming increasingly important.

The innovation management is required to create an environment in which new ideas or approaches are generated and realized. It is necessary that employees for innovation development and implementation in the different departments are provided with certain surroundings in order to ensure long-term corporate success.

Additionally, there is the responsibility for the development, introduction and implementation of technical and socio-technical products, which are new company-wise, as well as processes and solutions (cf. Stummer/Günther/Köck, p.25). On the one hand, attention must be paid to the technical and content-related implementation of the innovation process and, on the other hand, the social integration of every change in the corporate system needs to be monitored and coordinated.

This is accomplished through the development of communication structures as well as the implementation of incentive schemes and the reduction of innovation and change resistances.

Due to the fact that different parameters lead to generally different approaches towards problem solutions, a new approach towards finding ideas and possibilities in innovation

management of companies will be presented in order to specifically support the first step of innovation management.

Insights and approaches from various areas of public administration will be utilized for industrial companies.

Even though the structures of public administrations differ from those of industrial companies in many areas it is productive to elaborate common features and to implement promising solutions.

## **Basis**

Some basic thoughts are preliminary to the idea of an implementation of approaches in the public administration. In a first step, the structure and the similarities of the innovation systems of the industrial sector and the public administration will be examined.

## **Structure of the innovation systems of the industrial sector and the public administration**

The following elements define an innovation system (cf. Koschatzky, 2011, p. 19) according to which industrial companies have to act:

**1. Institutional structures:** Through other companies, research firms, government regulations, networks and routines institutional structures are being created.

**2. Incentive schemes:** Incentives for persons and institutions in order to promote technology transfers, learning processes, qualifications, startup companies, etc.

**3. Skills and creativity of the actors:** The actors within each system differ from each other regarding their skills and creativity as well as the variety of goods and services.

**4. Cultural characteristics:** Cultural characteristics come into action regarding a different approach towards and usage behavior of technology as well as social acceptance of the possibility of failing self-employment.

These elements can also be applied to public administrations. Additionally, however, three thematic factors, which have a determining influence on innovation activities, need to be taken into account (cf. Geppl, p. 19):

**5. Provisions of the law:** The power to establish laws or enactments is an instrument only official entities legally dispose of. At the same time these entities are to 100 percent bound to legal regulations, partly with explicit implementing provisions, which leave little to no scope for innovative implementations.

**6. Fiduciary application of funds:** Public funds are to be applied conservatively and reasonably as they are composed of fiscal revenue, taxes and fees of third parties. Particularly for this reason the generation of new competitive structures based on innovation steps (a normal process in a market economy in the industrial sector) is a highly controversial process and depicts a highly political method of control.

**7. Compulsory inclusion of the public:** The public administration is constrained (and partly legally bound regarding the duty of disclosure) to inform the public and third parties. This is also valid for areas based on innovations. Constant communication with the public may therefore be necessary. Through increasing experience and implementation of pilot innovation processes the standards are being developed on the basis of an evaluation and a developing administration. The above-mentioned factors, which are characteristic of the public administration, can often lead to the development of approaches, solution processes or operating principles that would seldom or never be realized or chosen in a company.

Nevertheless, there are cases in which unrecognized potential for innovations can be utilized for a company.

Based on these theoretical findings a model has been established, which can be used repeatedly in order to simply examine various observations in public administrations, gained

in a structured or arbitrary way, regarding a potential usage in the company. Thus, a decision about the realization or rejection of potential approaches is to be made as quickly as possible. Some of the initial hypotheses need to be verified by the project manager of the respective company during the preparation stage.

### **Initial hypotheses for the implementation process**

The whole implementation process is based on various assumptions that function as initial hypotheses:

- In the private sector as well as in public administration the field of structured innovation management experiences an increasingly active elaboration and constant professionalization (cf. Engel/Nippa, p. 67 seq.).
- In both organizational forms this is partly based on efficiency analyses but also on various other factors such as profiling, maintenance of power and other mechanisms (cf. Schliesky/Schulz, p. 106 seq.).
- Segments of the innovations system, the innovation processes and the innovation impulses cannot be applied equally as each of them show different specifics. However, the basic hypotheses and aims for the generation of an idea, the definition of an area of application and its successful implementation are comparable or similarly recognizable (Koschatzky 2011: p. 19).
- There are certain subareas in which the examination of an implementation of solution processes in innovation management from public administration into the private sector seems reasonable – be it due to specific approaches, ideas or higher pressure. This was also proven by the field trial of this model.
- Especially in view of numerous examples of success, which have already shown the chances of an implementation the other way round, the implementation of such a model is productive also for the respective industrial company.

### **The implementation process**

Based on the assumptions described in section 1 the implementation process can be run through and structured as follows. Prior to the commencement of the operational steps, however, a project manager or a committee with explicit decision-making structures within the company must be appointed. These will be responsible for planning, implementing and realizing the particular steps of the process. The manager or the committee needs to pay attention that the process steps will be handled correctly content-wise. They furthermore need to involve suitable employees or choose professionally qualified experts where necessary. It is in the nature of the process that there is a certain flexibility regarding its organization such as the moderation of the work stages, which the project manager can or must use in order to promote the process and obtain concrete results.

1. Selection of administrative approaches: The definition of potential administrative approaches, which will be examined regarding their innovative character and usability in the company within the framework of the implementation process. Those projects of the public administration which have been awarded with prizes at various national and international award ceremonies and contests will be used to identify attractive approaches. The results of these contests are often communicated very actively by the public sector entities and are thus easily accessible either regionally or transregionally via the websites of these entities (cf. Public Administration Award 2010). If this is not wanted, the interested company needs to establish a jury consisting of experts in the fields of public administration and private economy. Thus, the specific approaches, which are to be examined for the company, can be selected. Regarding a jury created specially by the company itself, various assessments and external opinions need to be expedited from the beginning. The jury is to be assembled in a way that it can remain unaltered in the long

term in order to recurrently present its approaches to obtain a structured, repeatable process. The final decision on the jury members as well as the determination of the number of members is made by the project manager of the company, taking into account options and manageability. The implementation process definitely profits from a variety of knowledge and experience among the jury members.

2. Progressive abstraction: The second step consists of the abstraction of the respective approaches with an eye toward the actual aim and the object of the efforts made through progressive abstraction (cf. Vahl, p. 109 seq.). The approaches of the public administration chosen this way are being revised in the sense of answering the core question regarding the underlying purpose “What does really matter?”. For that purpose the instrument of progressive abstraction is being applied. Thus, super-ordinate relationships can be identified and it will be determined which problem could be solved by which approach. This abstraction is being conducted by the project manager and a self-assembled workshop team (cf. Vahl, p. 109 seq.).

Implementation:

1. Description of the original problem
2. Reformulation of the problem
3. Trying to approach the super-ordinate relationship through the question “What does really matter?”
4. Search for new solution processes, which function as the origin for the reformulation of the problem in the next abstraction step
5. Repetition until the maximum abstraction step is reached

The project manager is required to supervise the disciplined adherence to the sequential processing of these five steps.

3. Creation of an expert pool: In order to evaluate and measure these abstracted approaches regarding the quality of the content, measured by innovative character and usability in an industrial company, a pool of experts is being created. Depending on the problem, availabilities and temporal possibilities, this pool should be as big as possible. Not only the number but also the heterogeneity of the matters, which the experts have to deal with during their work routines, is important. It is, for instance, essential not to survey only responsible officers from a locally operating media company as they would certainly assess potential problems in logistics differently than managers of a plant construction firm that operates on an EU-wide basis.

Ideally, the expert pool is composed of skilled and key employees or business executives as well as high-level management representatives. The inclusion of industrial association representatives is also worth considering. However, it has to be pointed out that the evaluation of innovation approaches can be difficult if it cannot be conducted from the view of a company with concrete needs and aims. A short briefing of the experts by the project manager regarding the evaluation possibilities and the time schedule of the evaluation process increases the expected response rate. The experts are selected by the project manager under the realistic assessment of availabilities and the willingness to actively and thoroughly participate in the overall process.

4. Creation of a questionnaire: A questionnaire is being established for a specific and structured survey among experts from industrial companies on their opinions on the innovative character of a certain measure as well as its applicability. The organization as the project applicant, the project name and the result of the progressive abstraction are listed on the questionnaire. In order to display the experts’ assessments two more columns are being inserted. One column is used to rate the innovative character of the respective project from “1”, which means that the idea is highly innovative, to “5”, which means that the project does not have any innovative character. The second column is used for rating the usability of the approach. “1” means that the approach is usable at all times, “5” means

that the approach is utterly useless. A sample questionnaire is presented in the attachment to this paper.

5. Evaluation of the survey data: It is the aim of the evaluation to offer a recommendation regarding the examination of possible implementations of approaches. Thus, the average value of expert opinions is gathered in the same way as the ones of the interested company. This way the evaluation of the most promising approaches for the company can be conducted step by step.

In the scope of the evaluation of the survey data the following questions and relations are being dealt with:

- Function of the expert: skilled and key employees vs. management function
  - Assessment of the innovative character of the approach – calculation of the experts' average rating
  - Assessment of the approach's usability in the company – calculation of the experts' average rating
  - Determination of the approaches with the highest and lowest average value regarding innovative character usability in the company
6. Modification for the industrial company: Based on these assessments the evaluations of the industrial company are compared to the average ratings of the experts. Thus, potentials and special features in the relative assessment of an approach can be disclosed to the company in comparison to the average of "normal" evaluations in order to add them to more detailed considerations during the next step. Through comparing the average ratings of the experts with those of the interested company it is possible to detect and prioritize the approaches that have been rated highly in terms of usability and innovative character in order to focus on their implementation in a time-efficient way. Field testing has shown that it was unrewarding to work on those approaches that had been rated more negatively by the company than by the experts as concrete, specific considerations are often contradictory.
  7. Examination of the practicability in the company: The development of the approaches identified according to the above-mentioned criteria regarding potential ways of an implementation to be used in the industrial company takes place in a structured workshop on the basis of a questionnaire for each of the abstracted approaches. This workshop is being managed and moderated by the project manager in order to uphold the time pressure without hinting to preformed ideas. Every abstracted approach is being presented within five minutes each. Afterwards, actual examples of implementations in the public administration will be depicted in order to demonstrate potential fields of application and to broadly describe the range of application through a publication issued by the public administration on the projects and approaches. If necessary, publications or project descriptions need to be requested from the respective authority. The questionnaire must be completed in 20 minutes at the maximum. This will be communicated at the beginning of the workshop in order to create a certain time pressure. Thus, the ideas that do not directly seem usable are being dismissed quickly (cf. transcript, workshop transformation model, p. 5 seq.). Between each of the approaches the project partners can take a break of approximately ten minutes.

Elements that need to be addressed (in the following order) during the workshop with the respective representatives of the interested industrial company:

- Description of the abstracted approach
- Definition of the uniqueness or special kind of approach
- In which areas of the company could these special approaches be used?
- Which advantages and disadvantages does this approach offer?
- Which problems arise regarding the utilization of the approach for the company?

- How can these problems be dealt with in order to still secure the approach for the industrial company?
  - Which groups of persons, stakeholders or third parties are required to utilize this approach in the industrial company?
  - Which rights, approvals or accesses are necessary for implementing the approach in the industrial company?
  - Can necessary investments or potential savings as well as income sources be assessed?
  - How could the individual steps of the realization look like?
  - According to which chronological order can these steps be implemented?
  - How does a communication plan for the industrial company (externally as well as internally) have to be designed?
  - How high is the probability of realization after answering these questions? Are there still problems regarding the realization, which have not been brought up yet? How can these problems be tackled?
8. Planning and realization: Together with the responsible representatives of the industrial company a project plan regarding the configuration and implementation of the adapted approaches in the company needs to be established, which will be done according to the pattern described in section 7. It is of central importance for every project plan and implementation as well as for the realization of the recently acquired approaches to clearly define consistent objectives, reasonable partial responsibilities and an entity with overall responsibility. A commonly agreed time frame of the realization with clearly defined milestones partly prevents a delay in implementation. The project manager should record the plan agreed upon and communicate it to all participants.
9. Evaluation: The evaluation of a process is necessary to use, on the one hand, potential room for improvement even after the completion of the implementation and, on the other hand, to maintain an attractive basis for further implementations and improve the ongoing process. For this purpose it is important to relate the evaluation precisely to the object of the implementation and not to foreground other factors, such as for example the personal relation between two participating actors. The evaluation needs to be done according to precisely defined criteria. The evaluation will be conducted by the partaking members of the industrial company but not those of the expert pool. The project manager must present the evaluation results to his or her superior authority as objectively as possible. Afterwards, the results need to be discussed in order to draw conclusions regarding future management. The purpose of a consistent evaluation form is to obtain feedback from the partaking decision makers and participants in the process. Additionally, a final evaluation of success or failure of the whole process from a subjective corporate view can be carried out on the basis of the results of the responses in the post processing with the project manager's superior authorities through comparing the required efforts in the implementation process and the achieved insights. This serves as the basis for further potential implementation steps. A sample evaluation form is presented in the attachment.

### **Conclusion and concluding remarks about the support regarding the implementation process**

In order to make a success of the process in the interested industrial company, which means the realization of a concrete innovation project, a further development of the respective innovation and project management, which encompasses support, motivation and information of all parties in the company involved in the implementation, is necessary additional to the already mentioned work steps and an authorized project manager. This is also shown in the example of the partner company CEMEX (cf. CEMEX 2012), with which a first field trial has been documented in the transcript.

This is valid regardless of whether the process is being implemented professionally in an in-house or a different department.

Furthermore, innovation management needs to provide employees with appropriate frame conditions for innovation development and transformation in the different corporate divisions in order to ensure long-term success and create a certain feeling of commitment.

This is, on the one hand, accomplished through the development of communication structures and, on the other hand, through the implementation of incentive schemes and the reduction of innovation and change resistances. It is vital to provide incentives, monetary or motivated through praise, during the implementation of a process. A short, detailed explanation and an overview over the planned efforts and the joint aim can often help eliminate numerous obstacles already at the beginning of a project.

### Attachment – general questionnaire

#### Evaluation of innovation projects of the public administration by industrial experts

*Survey on the implementation for the industrial company XYZ*

Organization	Project name	Progressive abstraction	Innovative character 1 = highly innovative 5 = no innovation	Usability of the approach in the industrial company 1 = always usable 5 = not usable
Information on the public administration's enforcing authority	Project name of the public administration's project	Short description of the core approach of the public administration's project	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5
			<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5
			<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5

Information on the criteria on whose basis the public administration's projects up for evaluation of were chosen.

Address for the delivery of the completed questionnaires as well as a contact possibility for queries.

Thank you for your time and support

*Figure 1: General questionnaire*

*Source: self-made production*

### Attachment – evaluation form and potential questions

#### Evaluation form

Thank you for taking a couple of minutes to fill out this evaluation form. Only if you voice your opinion and criticism we can improve the implementation process together. Thank you!

Name of the implementation project	Question and evaluation	Evaluation 1 = strongly agree 4 = strongly disagree
Project name	Do you see an overall improvement in the industrial company due to the implementation process?	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
	Were you sufficiently informed about your role in the implementation process?	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
	Do you consider the relation between effort and result in the industrial company adequate?	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
	Would you again start such an implementation process for the identification of potential innovation approaches and their utilization in your company?	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
	Do you see this as the most efficient way to utilize attractive	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4

	approaches of the public administration for an industrial company?	1	2	3	4
	Will you take part in another implementation process?	O	O	O	O
		1	2	3	4
Comments, suggestions for improvements:					

Figure 2: Evaluation form - example

Source: self-made production

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